Responses of Environmental Groups to
IDEM's Antidegradation Subgroup homework assignments

The following are the responses of the Environmental Groups to the assignments posed by IDEM following the September 16, 2008 meeting. We look forward to discussing these matters on October 30.

Assignment # 1:

Provide your suggested edits to the currently proposed applicability language of Section 1(b):

(b) Except as provided under section 4 of this rule, the antidegradation implementation procedures established by this rule apply to a proposed new or increased loading of a pollutant of concern to a surface water of the state. (Water Pollution Control Board; 327 IAC 2-1.3-1)

Remember, this language resulted from the discussion at the first subgroup meeting and was extensively reviewed at the second subgroup meeting. The review discussion did contemplate adding language to tie applicability to a "deliberative action". Please explain your reasoning for any proposed edits.

Response: This language is acceptable to the environmental groups.

Assignment # 2:

Provide your suggested edits to the currently proposed definition of "pollutant of concern":

(45) "Pollutant of concern" means a pollutant that is reasonably expected to be present in a discharge based on the source and nature of the discharge.

Remember, this language resulted from the discussion at the first subgroup meeting and was extensively reviewed at the second subgroup meeting. The review discussion seemed to end with the group acceptance of this language as long as IDEM clarifies that the current IDEM "Form 2C" process is how IDEM plans to continue to identify pollutants of concern for determining what pollutants need to be addressed by a permit. Please explain your reasoning for any proposed edits.

Response: This language is acceptable to the environmental groups.

Assignment # 3:

Complete the following table to identify your interest group's position on the key policy issues related to the types of discharges or actions that may be "exempt" from an antidegradation demonstration.

Note: A couple of actions (reduction of air pollutants and alleviation of a public health concern) currently included in Section 6 of the draft rule are included in the table for evaluation. At the second subgroup meeting, the appropriate level of review for these types of actions was discussed.

Also note: The last rows allow for "proposed additions". This is intended to capture your position on other types of discharges or actions that you may believe should also be "exempt" from an antidegradation demonstration. As discussed in the subgroup meetings, such discharges or actions included actions authorized under general permits, variances, etc. Please explain your reasoning for any proposed additional exemptions.

Response: See table in attached file "ANTIDEG PROPOSAL ENVIRO_Exemptions Table."

Assignment # 4:

Provide your suggested definition of "assimilative capacity". Currently, this term is not defined in the draft rule, but it is a critical concept that requires a common understanding by all who will apply antidegradation.

Response:

Background

The equivalent term "loading capacity" is defined in 40 CFR 130.2(f) as follows:

"40 CFR § 130.2 Definitions.
**** * ****
(e) Load or loading. An amount of matter or thermal energy that is introduced into a receiving water; to introduce matter or thermal energy into a receiving water. Loading may be either man-caused (pollutant loading) or natural (natural background loading).
(f) Loading capacity. The greatest amount of loading that a water can receive without violating water quality standards.
**** * * "***

See 58 Fed. Reg. 20802, 20903-04 (April 16, 1993) (EPA notes that assimilative capacity is functionally the same as the loading capacity that is defined in 40 CFR 130.2(f) and which forms the basis for total maximum daily load (TMDL) calculations)

Alternative definitions include the following selected from the EPA website:

"Assimilative capacity is the increment of water quality (in terms of concentration), during the appropriate critical condition(s), that is better than the applicable numeric criterion."

EPA Region VIII Antidegradation Guidance

"Assimilative capacity has been defined as the quantity of contaminants that can be added to a system without causing unacceptable alteration or impairing beneficial uses."

Environmental Protection Agency, Ocean Dumping; Notice of Final Determination To Deny Petitions To Redesignate the 12-Mile Site, [OW-2-FRL-2816-1], 50 FR 14336, April 11, 1985.

In 327 IAC 5-2-11.4(a)(12), loading capacity is defined as "the greatest amount of loading that a water can receive without violating water quality standards."

Proposal

From the above definitions and the basic principles applicable to NPDES permitting, the Environmental Groups conclude that "assimilative capacity" or "loading capacity" is:

"the amount of loading that can be allowed to a water body or segment under critical low flow conditions while protecting existing conditions and assuring that the new or increased loading does not cause or contribute to a violation of numeric or narrative water quality standards."

See also 40 CFR §§122.44(d), 131.12(a).

Assignment # 5:

Provide your suggested edits to the currently proposed de minimis language of Section 4(b)(13):

(13) A new or increased loading of a pollutant of concern that is a de minimis lowering of water quality determined according to the following:
(A) For a HWQ that is not an ONRW, OSRW or EUW, the following apply:
(i) Calculation considerations according to the following:
(AA) The proposed increase in mass-based effluent limits is less than or equal to the water quality-based effluent limit (WQBEL) calculated using ten percent (10%) of the unused loading capacity, or the DTBEL, whichever is more stringent.
(BB) The unused loading capacity has not decreased by more than X percent (X%) above the benchmark set at the time of the initial antidegradation demonstration or de minimis evaluation in the area of the discharge.
When the WQBEL calculated using ten percent (10%) of the unused loading capacity is greater than the WQBEL based on the FAV, the WQBEL based on the FAV shall be used as the De minimis Water Quality Based Effluent Limit.
(ii) The proposed increase in mass discharged shall be determined as follows:
(AA) By using the equation of Mp − ME = proposed increase in mass discharged;

where: Mp = monthly average mass effluent limitation for the pollutant of concern in the proposed discharge;

and ME = monthly average mass effluent limitation for the pollutant of concern in the existing permit.

(BB) If the existing permit does not contain a monthly average mass effluent limitation for the parameter but does contain a weekly average or daily maximum mass limit, the existing weekly average or daily maximum permit limit shall be converted into a monthly average value to be used in the equation in subitem (AA).

(CC) If the existing permit does not contain a mass limit for the parameter but does contain a concentration limit, this concentration limit shall be converted into a mass value, using the discharge flow determined under 327 IAC 5-2-11.4(a)(9) value to be used in the equation in subitem (AA).

(DD) If the existing permit does not contain an effluent limit for the parameter, the actual monthly average mass discharged shall be used in the equation in subitem (AA).

(iii) For heat, the following conditions must be satisfied:

(AA) The new or increased discharge will not result in an increase in temperature in a stream or an inland lake, outside of the designated mixing zone, where applicable.

(BB) The new or increased discharge will not result in an increase in waste heat of an amount in a stream greater than the amount determined by calculating the number of British thermal units (BTUs) required to raise the temperature of the stream design flow of the receiving stream by one (1) degree Fahrenheit.

(B) For a HQW that is an OSRW or EUW, the following apply:

(i) Calculation considerations according to the following:

(AA) The proposed increase in mass-based effluent limits is less than or equal to the mass calculated using the new or increased flow and the water quality based effluent limitation (WQBEL) calculated without a mixing zone or the DTBEL, whichever is more stringent.

(BB) The unused loading has not decreased by more than X percent (X%) above the benchmark set at the time of the initial antidegradation demonstration or de minimis evaluation in the area of the discharge.

(ii) The proposed increase in mass discharged shall be determined as follows:

(AA) By using the equation of Mp − ME = proposed increase in mass discharged;

where: **Mp = monthly average mass effluent limitation for the pollutant of concern in the proposed discharge;**

and ME = monthly average mass effluent limitation for the pollutant of concern in the existing permit.

(BB) If the existing permit does not contain a monthly average mass effluent limitation for the parameter but does contain a weekly average or daily maximum mass limit, the existing weekly average or daily maximum permit limit shall be converted into a monthly average value to be used in the equation in subitem (AA).

(CC) If the existing permit does not contain a mass limit for the parameter but does contain a concentration limit, this concentration

limit shall be converted into a mass value, using the discharge flow determined under 327 IAC 5-2-11.4(a)(9) to be used in the equation in subitem (AA).

(DD) If the existing permit does not contain an effluent limit for the parameter, the actual monthly average mass discharged shall be used to be used in the equation in subitem (AA).

(iii) Relative to temperature, the new or increased discharge will not result in an increase in temperature:

(AA) in a stream or an inland lake, outside of the designated mixing zone, where applicable; or

(BB) in Lake Michigan, as allowed in 327 IAC 2-1.5-8(c)(4)(D)(iv), at the edge of a one thousand (1,000) foot arc inscribed from a fixed point adjacent to the discharge.

(iv) Relative to heat, the new or increased discharge will not result in an increase in waste heat in an amount:

(AA) in a stream greater than the amount determined by calculating the number of BTUs required to raise the temperature of the stream design flow of the receiving stream by one (1) degree Fahrenheit; or

(BB) in Lake Michigan, greater than five-tenths (0.5) billion BTUs per hour.

The concept of de minimis was discussed at the third subgroup meeting. The discussion considered the following policy issues:

- Is 10% of the unused loading capacity the correct percentage for determining a de minimis discharge?
- What is the appropriate de minimis for an OSRW/EUW?
- Is the final acute value (FAV) the appropriate ceiling for a de minimis discharge?
- When calculating the de minimis, should the effluent flow be included, adding to the receiving stream's loading capacity?

Please address these policy issues in your suggested edits and explain your reasoning for any proposed edits.

Response: See attached file "ANTIDEG PROPOSAL ENVIRO_De Min Proposal" for proposed language, the concepts for which were taken largely from the Missouri antidegradation rules and the existing Indiana regulations applying to the Great Lakes basin.

In response to the four questions:

We do not believe that 10% of the unused loading capacity is the correct percentage for determining a de minimis for proposed new or increased discharges to Indiana water bodies. As Kentucky Waterways Alliance v. EPA (6th Cir. 2008) clearly indicates, cumulative degradation that exceeds 10% cannot properly be seen as insignificant as a matter of law or reason. Accordingly, for non-OSRWs and non-EUWs, we propose a 5% limit on de minimis degradation with the understanding that up to 10% cumulative degradation can be allowed without a showing of necessity.

As we will explain further on October 30, we do not believe that 10% of the unused loading capacity is the correct percentage for determining a de minimis for proposed new or increased discharges to Lake Michigan or other OSRWs. We believe that sound policy would not allow a de minimis for any pollutant for which it was proposed to discharge more than the background level of that pollutant. While allowing discharges up to the background level does allow increased loadings, OSRWs should not be allowed to be degraded unless it has been shown that it is necessary to do so to accommodate important social or economic development.

We do not believe that the final acute value is an appropriate ceiling because this allows acutely toxic discharges that have not been shown to be necessary. At a minimum, an antidegradation analysis should be required whenever a discharge is proposed that would violate the acute water quality standard (FAV/2) at the end of the pipe.

Regarding treatment of the proposed new or increased effluent flow, upon further consideration of the history of the GLI, the importance of maintaining current Indiana protections and sound policy, we do not believe that the proposed effluent flow should be considered in calculating the assimilative or loading capacity. Not counting the proposed effluent flow provides necessary increased protection to low flow headwater streams that can be critical to the environment. Further, not counting the proposed effluent flow will prevent use of groundwater or other water as dilution to avoid antidegradation requirements. Finally, the 10% cumulative assimilative capacity allowance is extremely generous.[i] It is unclear from federal law that any de minimis should be allowed at all and 10% is at or above the extreme high side of what has been allowed as de minimis. If not counting the proposed effluent flow in some circumstances brings the number below 10%, that is appropriate given these circumstances.

Finally, we would be willing to discuss methods of calculating the de minimis that, while respecting the principle that no more than a 10% cumulative de minimis can be allowed, would be easier to calculate. For example, allowing discharges that meet water quality standards for all POCs at the end of the pipe wherever there was at least 20:1 dilution would be much easier for IDEM to calculate, almost always protect assimilative capacity and allow discharges to pass as de minimis in many high dilution situations. Simply requiring an antidegradation analysis in all situations in which there was less than, for example, 20:1 dilution would be an easier rule to apply and would require an antidegradation analysis in very few situations it which a de minimis exception is proper.

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[i] ***In Ohio Valley Environmental Coalition, the court declined to overturn the West Virginia rule that would allow a discharger to use 10% of the remaining assimilative capacity without making a Tier II showing of necessity. 279 F. Supp. 2d at 770. However, given the "narrow" and "tightly bounded" nature of the de mininis doctrine, this 10% exception appears to be the outer limit. C.f. Alabama Power, 636 F.2d at 360-61; Bestfoods v. United States, 260 F.3d 1320, 1325 (Fed. Cir. 2001) (7% exemption is "relatively generous").***